

Appl. No. 10/769,344
Atty. Docket No. 9005MR
Amdt. dated 02/16/2006
Reply to Office Action of 11/16/2005
Customer No. 27752

REMARKS

Applicants first wish to thank Examiner Mulcahy for discussing the merits of this case with the Applicants and their representatives on February 2, 2006.

Claim Status

Claims 1 - 20 are pending in the present application. No additional claims fee is believed to be due.

Claims 1 and 14 have been amended to more particularly characterize the invention. First, "n" is limited to be an integer from 3 to 7. Antecedent basis for this amendment is found in the specification on page 5, line 2, and in the claims as originally submitted. Second, it has been specified that the phase change solvent has a phase change in a temperature range from about 40°C to about 250°C. Antecedent basis for this amendment is found in the specification on page 5, lines 8-9. Third, claim 14 has further been amended to correct the order of the alphabetical terms.

It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested.

Double Patenting

Claims 1-20 are provisionally rejected under 35 USC § 101 as claiming the same invention as that of claims 1-20 of co-pending Application No. 10/935,268. Applicants note that a duplicate copy of the present claims was inadvertently filed as the claim set in the co-pending Application No. '268. Any conflict between the present claims and those of the co-pending Application will be eliminated by the filing of the proper claim set in the co-pending case. As such, Applicants respectfully request withdrawal of the provisional 35 USC § 101 rejection of claims 1-20.

Claims 1-19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 14, 15, 19 and 20 of co-pending Application No. 10/936,938 and claims 1-17 of co-pending Application No. 10/429,432. With regard to each of the obviousness-type rejections, the Office Action asserts that "[a]lthough the conflicting claims are not identical, they are not patentably distinct from each other because the polymeric compositions and the phase

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change solvent can have the same chemical structure as those claimed in the [respective] co-pending application[s]."

Applicants respectfully traverse the obviousness-type double patenting rejections on the basis that the claims of the present invention are indeed patentably distinct from the claims of each of the co-pending applications. However, in order expedite prosecution, Applicants concurrently submit with this response the appropriate Terminal Disclaimers over the co-pending applications. In submitting the Terminal Disclaimers, Applicants state for the record that the Terminal Disclaimers are not an admission of obviousness of the present claims. In fact, the Federal Circuit has held that:

[T]he filing of a terminal disclaimer "simply serves the statutory function of removing the rejection of double patenting, and raises neither presumption nor estoppel on the merits of the rejection."

Quad Env'tl. Techs. Corp. v. Union San. Dist., 20 USPQ2d 1392 (Fed. Cir. 1991).

Applicants submit that the provisional obviousness-type double patenting rejections are overcome by the Terminal Disclaimers submitted herewith, and respectfully request withdrawal of the obviousness-type double patenting rejections.

Rejection Under 35 USC §103(a) Over Knobel Alone or in View of Westbrook

Claims 1-17 have been rejected under 35 USC § 103(a) as being unpatentable over US Patent No. 4,618,630, issued to Knobel (hereinafter referred to as "Knobel"), alone, or in view of US Patent No. 5,389,711, issued to Westbrook et al. (hereinafter referred to as "Westbrook"). According to MPEP § 2143.03, and the case law cited thereunder, "[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." Applicants submit that Knobel does not teach or suggest all of the claim limitations of currently amended claims 1, 14 or the balance of the claims, which depend, directly or indirectly, therefrom.

According to the Office Action, Knobel "...shows polymeric compositions that incorporate terephthalic esters which can have substituents so as to overlap in scope with the claimed solvent compound, see column 4 lines 35+." Applicants respectfully disagree. In both of currently amended claims 1 and 14, n is an integer from 3 to 7, which provides for the number of (Q-P_x) units comprising the phase change solvent. Since Q represents a substituted or unsubstituted difunctional aromatic moiety, its number is

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reflective of the number of phthalate groups that are present in the phase change solvent. Substitution of the 3 to 7 difunctional aromatic moieties into the formulas disclosed in claims 1 and 14 provides for oligomeric phase change solvents comprising 3 to 8 repeating phthalate groups. In contrast, substitution of difunctional aromatic moieties into the formulas disclosed in Knobel, provides for esters containing, at most, 2 phthalate groups as described below.

Knobel discloses two structures for its "suitable" esters and diesters in Col. 3, lines 38-44 and Col. 4, lines 36-44, respectively. Examining the disclosure of Knobel's "suitable" diester first, R^3 is disclosed as the central group and is characterized as "...an inertly substituted organic diradical." *See Col. 4, lines 42-44.* "Advantageously, R^3 is an alkylene diradical, a (sp) alkylene ether diradical or polyether diradical. The group R^3 advantageously contains from about 2-20, preferably from 2-10 carbon atoms." *See Col. 4, lines 45-49.* Two R^2 groups are linked via ester bonds to the central R^3 group and may be "...aliphatic, cycloaliphatic, aromatic, aliphatic-substituted aromatic, aromatic-substituted aliphatic, and the like." *See Col. 3, lines 51-55.* Upon substitution of one of the aforementioned diradicals for the R^3 group and two aromatics or cycloaliphatics for the R^2 groups, a diester comprising two phthalate groups is formed. Thus, in this manner Knobel discloses diesters comprising two phthalate groups, i.e., diesters in which $n=2$ by Applicants' descriptors.

However, Knobel does not disclose an oligomer in which n is an integer from 3 to 7 based on its diester structure as is required in the currently amended claims. Turning to Knobel's structure (II) in Col. 3, a triester may indeed be constructed when $m=3$. According to the structure, R^2 forms the central organic substituted group, and m is the number of R^1 organic groups independently linked to R^2 via an ester bond linkage as is represented in the parentheses; thus there may be 1, 2 or 3 of the R^1 side groups attached to the central R^2 group. However, it is apparent that when $m=3$, the structure (II) is linked together in a star-shape, rather than in a head-to-tail configuration like the oligomer of the presently amended claims. To wit, R^2 serves as the central organic substituted group, or center point of the star, and the R^1 side groups serve as the points of the star. Moreover, the R^1 groups of Knobel do not comprise aromatic or cycloaliphatic groups to form phthalates in conjunction with the existing ester bonds. Instead, the R^1 groups are merely identified as "...an inertly substituted organic group..." such as "...an inertly substituted hydrocarbyl or poly(oxyalkylene) group having from about 2-20, preferably 2-10 carbon atoms" etcetera. *See Col. 4, lines 22-29.* Consequently, Knobel's structure (II) cannot

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form a triester comprising three or more phthalate groups in a head-to-tail configuration, i.e., an oligomer in which $n=3$ or above.

Since Knobel does not teach or suggest the *oligomeric* phase change solvents of claims 1 or 14, which require *inter alia* that n is an integer from 3 to 7, it is clear that Knobel does not meet the requirements to establish a *prima facie* case of obviousness under MPEP § 2143.03. As such, Applicants respectfully request withdrawal of the § 103(a) rejection of claims 1 and 14, and the balance of the claims, which depend directly or indirectly therefrom.

Assuming *arguendo*, that Knobel had disclosed the structural elements of the phase change solvent of the presently amended claims, Applicants assert that the presumption of obviousness has been overcome by a showing of an unexpected results per *In re Soni*, 54 F.3d 746, 34 USPQ2d 1684 (Fed. Cir. 1995), which states that:

One way for an patent applicant to rebut a *prima facie* case of obviousness is to make a showing of 'unexpected results,' i.e., to show that the claimed invention exhibits some superior property or advantage that a person of ordinary skill in the art would have found surprising or unexpected. The basic principle behind this rule is straightforward—that which would have been surprising to a person of ordinary skill in a particular art would not have been obvious. The principle applies most often to the less predictable fields, such as chemistry where minor changes in a product or process may yield substantially different results.

It is well known in the art that plasticizers comprising phthalate groups (such as dioctyl phthalate), may be used to lower the viscosity and improve the melt processability of thermoplastic esters (TPE's) or mixtures thereof. *See page 2, lines 12-13.*

However, due to their low molecular weight and their softness and/or fluidity down to room temperature, these agents tend to reduce the mechanical properties of the TPE's and blends. In contrast, the present phase change solvents [which have been amended to comprise 3 to 8 phthalate groups] are solid-like at or below body temperature, thus, they may function like reinforcing particles (i.e., fillers) in the TPE's and blends. Moreover, the phase change solvents, due to their chemical formula and molecular weights, may be intimately mixed the TPE's and function like compatibilizers. When they solidify, they may be fairly homogeneously dispersed throughout the TPE matrix. Homogeneous distribution of reinforcing particles is desirable since few stress concentration spots (detrimental to mechanical properties) are created in such structures. Their compatibilizing function may also lead to reduced phase sizes and reduced stress concentrations at the interfaces between the phases of the TPE's. *See page 2, lines 14-24.*

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Hence, current claims 1 and 14 have been amended to reflect the fact that due to their high molecular weight and physical structure, the phase change solvents of the present invention have a phase change in a temperature range from about 40°C to about 250°C.

Applicants assert that the phase change properties obtained via the alterations in structure between the present phase change solvents and those in Knobel provide the superior property of a phase change in the temperature range from about 40°C to about 250°C. As noted in the specification, this is a superior property particularly in the field of improving the melt processibility of TPE's in which it is highly desirable to have a plasticizer that does not reduce the mechanical properties of the TPE's and blends. Yet there is no teaching or suggestion in Knobel of modifying the structures of the "antistatic agents" disclosed therein to achieve these properties. Consequently, Applicants respectfully submit that these surprising and meaningful properties form yet another basis for the withdrawal of the obviousness rejections of currently amended claims 1, 14 and the balance of the claims which depend therefrom.

In conclusion, Applicants respectfully request withdrawal of the § 103(a) rejections of claims 1-17 over Knobel. Since Applicants have established that the primary reference of Knobel cannot be properly applied in the suggested context to currently amended claims, Applicants believe that there is no need to address the propriety of the application of Westbrook as a secondary reference. Nonetheless, Applicants note that Westbrook fails to resolve any of the shortcomings of Knobel, and thus its combination with Knobel neither teaches nor suggests, expressly or inherently, each and every element of the invention as amended. Thus Applicants additionally request withdrawal of the § 103(a) rejections of claims 1-17 over Knobel in view of Westbrook.

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Conclusion

In light of the above remarks, it is requested that the Examiner reconsider and withdraw the Double Patenting rejections as well as the rejections under 35 USC § 103(a). Early and favorable action in the case is respectfully requested.

This response represents an earnest effort to place the application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, reconsideration of this application, entry of the amendments presented herein, and allowance of Claims 1-20 is respectfully requested.

Respectfully submitted,

THE PROCTER & GAMBLE COMPANY

By 

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